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AUTHOR	Kelty, Nina
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ABSTRACT

The purpose of this study was to determine the proficiency level of teachers at South Plainfield High School (South Plainfield, New Jersey) in the use of word processing, spreadsheet, presentation, and database software. A survey was conducted to evaluate the level of the teachers' personal technological background, staff centered technology, student-centered technology, and staff development activities. Results found that, although a majority of the teachers are comfortable in the personal use of word processing, they incorporate very little use of technology in the classroom. Classroom assignments related to the use of the Internet as a research tool. Teachers' reactions revealed a need and desire to attend development workshops that provide meaningful classroom activities. The lack of presentation hardware restricted the use of presentation software. Results of the survey will provide valuable information in the design of professional training programs. The challenge of the integration of technology into the classroom is more human than technological and should include an investment in human resources. (Contains 21 references.) (Author/AEF)

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ED 471 132

Computer Proficiency

The Digital Generation Gap

Nina Kelty

South Plainfield High School, South Plainfield, New Jersey

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Abstract

The purpose of this study was to determine the proficiency level of computer use of the teachers at South Plainfield High School in South Plainfield, New Jersey in the use of word processing, spreadsheet, presentation and data base software. A survey was conducted to evaluate the level of the teachers' personal technological background, staff centered technology, student-centered technology and staff development activities. Results found that although a majority of the teachers are comfortable in the personal use of word processing, they incorporate very little use of technology in the classroom. Classroom assignments related to the use of the Internet as a research tool. Teachers' reactions revealed a need and desire to attend development workshops that provide meaningful classroom activities. The lack of presentation hardware restricted the use of presentation software. Results of the survey will provide valuable information in the design of professional training programs. The challenge of the integration of technology into the classroom is more human than technological and should include an investment in human resources.

The Digital Generation Gap

Reflecting on my early years of teaching experience in business education, I thought I knew everything there was to know about how to operate a typewriter. Then, came this thing they called a memory typewriter. What an invention—I needed to know everything about that little machine. It never stopped, these transitions in technology, but I kept thinking there will never be a machine that I will not be able to control, and so I kept up with the technology—almost forty years of keeping abreast of the latest. I have witnessed a great deal of change, I have learned and I have kept myself informed.

During my college years, I worked at Educational Testing Service in Princeton for a summer in the systems department. I wanted so much just to see what a computer looked like. The computer at ETS was in a special bombproof area, since that was a time when offices were being bombed because people were afraid that these machines would replace them. Having special clearance, I was permitted to enter the computer area. What a day that was when I would actually get to see my first computer! I had expected to witness something that might resemble a science fiction movie, but it turned out to be simply a huge room with metal boxes all over and no little lights flashing. I remember thinking is that all there is?

We have come a long way and now there is a computer at every one of my students' workstations, each one probably having the ability to consume more data than that big box I saw years ago.

I still teach—I still teach keyboarding skills, but the level of my knowledge and the type of student I teach has changed. I used to teach office-bound students, mostly female who would enter the world of work as secretaries upon graduation from high school, and the entire program

would focus on their training to become competent office workers. Now most of my students are college bound, mostly male, wanting to refine their computer skills so they have the knowledge they need to function in the institutions of higher learning.

I have managed to keep myself informed about the changes in technology, but many of my colleagues have not. I am concerned that our students may know more than their teachers.

The age of technology is here and it is not going to go away. There are probably very few professions that do not in some way incorporate the use of a computer. From cabinet making to chemistry, art to auto mechanic, computers have their place in almost every industry. We are on the brink of a paperless society. The children of today are growing up into a world where most of their daily functions will be accomplished via a computer. Already banking and bill paying are done "on-line". People buy anything from books to cars to even homes through the use of their computer. They schedule vacations, book airline tickets, and even talk to one another—all "on-line". And in education, learning has left the classroom.

Today, experience with computers starts at an early age. Adults have a much harder time learning computer skills than children. Kids have grown up in a wired world, their computer proficiency often acquired through years of playing games, and they're not scared of computers. Whereas, many adults have grown into this technology age and are somewhat uncomfortable when change is required.

Attention should focus on recognizing that many faculty members have trouble acclimating themselves to computer equipment—and that students do not, and plan a professional development program that focuses on skill-building and gives teachers incentives to devote the time and energy needed to use computer technology.

In addition, the New Jersey State Department of Education lists the use of information and technology training as integral parts of the Core Curriculum Content Standards, adopted in 1996. Standard 2 states "all students will use information, technology, and other tools" (1996). School districts have had to adjust educational programs and teaching techniques so that students can achieve the new standards. It would follow that with the inclusion of technology in many phases of instruction, that district personnel are trained sufficiently to incorporate the new standards.

Purpose of the Study

The purpose of the study was to determine the current computer proficiency level of the faculty at South Plainfield High School, in order to identify areas of staff development needed to incorporate training programs that foster skill building in computer use in such areas as word processing, spreadsheet, presentation and database applications that are comprehensive and effective in the classroom. Teachers often complain that computer based workshops and training apply to skills that the teacher may not have use for in the classroom and so the skills which were attempted are meaningless and not applicable to classroom use. Professional development should focus on skills where the teacher is able to return to his/her classroom bursting with ideas on how to make use of the newly acquired skills.

Guiding Research Questions

Data collected has been evaluated to answer the guiding research questions, as follows:

1. What is the proficiency level of faculty in the use of computers in the areas of word processing, spreadsheet, presentation, and database applications at South Plainfield High School?
2. How are teachers incorporating the use of technology in the classroom?

3. How are teachers evaluating software for use within their subject areas?
4. What areas of staff development need improvement at South Plainfield High School to meet the requirements of integration of computer use in the classroom?

Operational Definition of Terms

Computer proficiency level. Computer literacy skills that put a variety of computer programs to effective use in the classrooms at South Plainfield High School, including the use of the Internet as a learning tool. Faculty members will demonstrate proficiency in tasks involving the use of word-processing, spreadsheet applications, presentation software, and database applications. A technically competent teacher has the ability to operate school computers to access and use the basic software available, evaluate educational software, use computers for problem-solving data collection, send and receive electronic mail, create effective, computer based presentations, and integrate technology into student learning activities into the curriculum. A review of faculty competencies included subject matter related software as well.

Delimitation (the boundaries of the study)

The study was limited to full-time faculty members of the South Plainfield High School, South Plainfield, New Jersey. The following were not included in the study: substitute teachers, guidance counselors, special services personnel, child study team members, student teachers, administrators who teach, nurses and aides.

Assumptions

Instruction in the use of a computer is necessary and must be incorporated into the curriculum at South Plainfield High School. Teachers answered survey questions honestly and with thought. As adults, most teachers have a much more difficult time figuring out how to use a computer effectively than the average children do.

Significance or Anticipated Benefits of the Study

Results of this study provided information and a base of knowledge to help plan and coordinate an effective technology staff development program at South Plainfield High School. Results of this research aided in the design and implementation of this program. Developing a successful technology-training program requires more than a few sessions of basic training. In addition to the acquisition of hardware, school districts must recognize the need to allocate more resources for professional development. Unless this is done, schools may be left with the tools but not the talent to prepare youngsters for this technological world.

The ultimate benefit, of course, lies in the fact that the students of South Plainfield High School are equipped with the educational skills in computer use they will need to prepare them for the world that they face when they leave high school.

Review of the Literature

The question no longer exists as to whether or not technology should be integrated into the classroom. It is here and it is here to stay, as people continue to discover how to apply new technology to everyday living, working and learning. With the rapid changes in technology, changes must also take place in the classroom. The role of the traditional teacher has changed from a dispenser of knowledge to a classroom facilitator (Herr, 2000). But when there is change, there is also resistance to change—there is anxiety associated with change. Professional development should not be a band-aid for change—it needs to be carefully planned to make the most efficient use of classroom technology. Often districts spend much on the technology tools, but not enough on how those tools will be integrated into effective classroom learning (Tenbusch, 1998).

The purpose of this review of the research literature is to analyze and synthesize three basic areas surrounding the need for determining basic computer proficiencies for teachers—that of the changing role of the teacher, the anxiety associated with change and the reluctance of change, and how best to train the teacher.

The following questions will be addressed:

- How has the role of the teacher changed?
- Is there reluctance on the part of the teacher to integrate technology and if so, why?
- What are some professional development programs that really work?

Changing Role of the Teacher

Educators have always been called upon to keep abreast of the fast-paced changes taking place both in the workplace and in the classroom. Not only does the teacher have to be ready to enter the 21st Century, but we need to be sure our students are ready as well. Core curriculum requirements (Core Curriculum Requirements, State of New Jersey, 1996) mandate that technology be integrated into the classroom at all levels and in all subject matters. The impact of the Internet and the World Wide Web has affected us in ways that were only imagined years ago. It has come to where we are educating and learning at the desktop.

In January 2001 a survey, conducted by *T.H.E. Journal*, an educational journal dealing with technological horizons in education was distributed to all 50 states and the District of Columbia to gather information about educational technology (Appendix A) (Roberts, 2001). Thirty-one states responded to the questionnaire in whole or in part. (Roberts, 2001). Highlights of the survey showed that 65% of the states reporting expect to spend as much or more on the purchase of new hardware for 2002 as they spent in 2001 (Roberts, 2001), that one-third of the

states reporting require students to take a course about technology before graduating (Roberts, 2001) and that 90% of the 31 states reporting either require or recommend the integration of computers into the curriculum (Roberts, 2001). Of the 31 states reporting New Jersey was one of four states (Louisiana, New Jersey, Texas and Wisconsin) that said they require the integration of computers into the curriculum (Roberts, 2001). New Jersey was not among the states responding to require that students take a technology course as a requirement for graduation (Roberts, 2001). In the area of funding most technology directors expect to see the greatest increase to be budgeted in the area of professional development and technical support in the 2001-2002 school year (Roberts, 2001).

Although many states were reluctant to rate the proficiency level of their teachers, Julia Stapleton, director of educational technology of the New Jersey State Department of Education based her responses of teacher proficiencies as Beginner, Intermediate, Advanced, and Instructor. Based on that scale, New Jersey estimated that 30% of the teachers were at the Beginner level, 46% were at the Intermediate level, 20% at the Advanced level, and 6% were at the Instructor level (Roberts, 2001).

Traditionally teachers would rely on the course textbook to guide lessons through the subject matter. With our technology rich classrooms the bounds of information is endless. The teacher's role has been modified to learn how to use the infinite resources available on the Internet and the World Wide Web. The teacher must learn how to use it, determine what is and is not appropriate for learning. Just because it's on the Web, does not mean it is reliable and accurate information. Both teacher and student must become skeptical users of the information available (Girod, Cavanaugh, 2001).

The following table illustrates the changing role of the teacher in terms of the epistemological, psychological and social and relational nature of change:

Table 1

Nature of change	Change from...	Change to...
Epistemological Related to curriculum and the reorganization of subject matter, content, and course materials	• Subject matter as ideas previously defined and delineated • Subject matter as represented in texts • Subject matter represented in traditional forms such as text, charts and graphs and static models	• Subject matter as tentative, authentic, and situated in real world contexts • Subject matter as represented in primary sources • Subject matter represented in new forms such as databases, narrative, real-time video and audio, and dynamic models
Psychological Related to notions of student learning and how to design environments that facilitate learning most effectively	• Learners as receivers or constructors of knowledge • Learners complete predetermined tasks and assignments • Learners engage in pre-designed and delineated inquiry	• Learners as constructors and consumers of knowledge • Learners design of alternative representations of subject matter ideas • Learners engage in open-ended, unbounded inquiry afforded through simulations and virtual environments
Social and Relational Related to social norms, values, and power structures between teachers and students	• Teacher as keeper of knowledge, order and power • Teacher as definer of learning contexts • Students situated in local learning community	• Teacher as guide, subject matter learner, and mediator of power • Teacher as pusher of contextual boundaries • Students situated in global learning community
• Source: Girod and Cavanaugh, *Technology as an Agent of Change in Teacher Practice*, T.H.E. Journal, April 2001.		

Regardless of these changes, teaching's seven laws remain constant (Shafer, 1998). These laws are (1) knowing the subject, (2) generating student interest (3) using words that students know, (4) building on facts and experiences, (5) stimulating self-learning, (6) learning by doing and (7) reinforcing (Murphy, 1999). Experts indicate that it is now necessary to retool

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ourselves every seven years and technology makes it necessary to refresh our technology base every three to four years (Morgridge, 1998).

Dr. Rodney G. Jurist (2000) of Rider University in New Jersey identified at least ten ways in which technology advances educational reform goals. They include (1) teaching basics in ways that extend beyond drill and practice. (2) training students to think by using technology as a learning resource, (3) preparing students for a digital world by completing projects involving technology. (4) making learning authentic through field experiences and "real life" simulations, (5) changing teacher lecture formats to active inquiry, (6) developing a better teaching force by networking with businesses, other educational institutions, and colleagues from other disciplines. (7) strengthening home-school connection by providing information services for parents and community, (8) enhancing student interest in class work through the excitement of technology. (9) making the most of assessment through the use of interactive multimedia and portfolios. (10) opening the class to the entire world through the Internet.

Many faculty members are comfortable with the use of email and use of the Web and have made somewhat unconscious progress in technological use by setting up email accounts with their students (Gilbert, 2000). However, most teachers don't have the time nor the training needed to make pedagogical/technological changes in the classroom, but feel obliged to do so (Gilbert, 2000).

The emergence of new technology-based educational options is not going to go away (Gilbert, 2000). Developing self-confidence in teachers is critical to their learning and attitude. Many students know far more than teachers of the workings of computers and technology. Fears will be reduced however with increased use in the classroom. A key point is that there is disparity among students themselves as to their degree of experience. Some students have better

equipment at their homes than most schools can afford. Instructors also want courseware that does not need to be upgraded often and will integrate with what they already know and use (Decker, Schulman, Sanchez, 2000).

A teacher of ten years, Pat Herr writes that the computer had very little use to her in her first year of teaching. She has been teaching fifth grade in an elementary school in Virginia and through meaningful training, she shares that she "clearly became more of a facilitator of learning, rather that the "sage of the stage". It did not replace my role as a teacher; it simply made my job easier and expanded my role in ways I never thought possible" (Herr, 2000). After completing assignments she would encourage her brighter students to go on-line to such sites as www.brainquest.com to enhance their skills and enrich concepts (Herr, 2000).

The role of the teacher has changed dramatically over the past few years. It should be emphasized that although the role may have changed, technology should be implemented as a tool to make the job easier, not as a threat to the position. Technology has changed the role, but has not changed the teacher. The teacher needs to change the teacher.

Reluctance to use of technology

As schools across the nation race to be the first to have all the latest in technological advances, a computer at every desk, CD-ROM "books", etc., little or no regard is often placed on who is going to do all the training on all this great stuff. Children today are growing up in a wired world, but many teachers have grown up as spectators to the changes. And now suddenly they are forced to incorporate computer-based applications into their curriculum, often changing drastically the methods and means of delivering course content. Many teachers do not see the value of all the promises that techno products are claiming and pretty much have the attitude that what they have been doing for years has worked and they can just keep doing it their way. The

problem with the reluctant teacher is that they are not properly trained and unfortunately little has been done to prepare the reluctant teacher for the computers, which are flooding their classrooms, many of which sit idle (McKenzie, 1999). There is evidence (Becker, 1999) that as many as seventy per cent of the teachers in American schools fall into the "reluctant" or "late adopter" categories when it comes to computers and other new technologies. Some have had little or no training and others fall into the category of "knowingly resist" (McKenzie, 1999).

The characteristics of the late adoptors are different from those of early adoptors. Late adoptors are teachers who have not yet embraced new technologies and have not yet blended these tools into their daily classroom learning activities. They awaken one day with computers in their rooms without having requested them (McKenzie, 1999).

McKenzie offers the following strategies and guidelines to reach late adoptors and reluctant technology users: (McKenzie, 1999) (1) clarify the bottom line—gains in student performance. No one seems to be providing evidence that there is substantial gain in student performance by integrating computer use. (2) Deliver a complete package, offer more than cables and computers—teachers are looking for packages that have been tested, refined and perfected. (3) eliminate risk and surprise, (4) speak their language, (5) offer continual support. (6) emphasize teams, (7) find out what turns them on, (8) provide rewards and incentives. Too little attention is paid on motivation. Teachers are expected to learn on their own time. It is too important not to compensate and recognize the amount of time, thought and energy that goes into designing lessons, which incorporate the new technologies (McKenzie, 1999).

Computer anxiety is a fear about computers that can cause computer user avoidance (Lian, 1999). In order to reduce the level of anxiety, it is necessary to promote and train individuals on the use of the computer and to give meaningful experience. Gender also plays an

important role in the level of anxiety and attitude among teachers. Females tend to have less experience and show less interest in computers than their male counterparts (Lian, 1999).

In May, 1997, a panel of educators informed members of the United States Congress that it is not necessarily a lack of equipment that is a problem in schools, that the number one problem are the teachers. They seem to be the "biggest barrier to computer literacy" (Cavrak, 1997). Many teachers do not know how to use computers, and even more do not know how to use them for teaching (Cavrak, 1997). Joseph Hofmeister, technology director for the Cincinnati Country Day School, states that "…veteran teachers are worse. A lot of them simply don't want to use the new technology, or are afraid of it, or don't want to compete with the Internet as a resource for learning. But the danger is that in many cases, there's no way teachers can keep up with their students" (Cavrak, 1997).

Regarding concerns of beginning teachers about using learning technologies in the classroom, Dr. Tony Jones (1998) observed that a number of studies have shown that although a beginning teacher may be comfortable with his/her own use of a computer, this does not necessarily mean he/she will integrate use of technology into the classroom. Jones used two instruments to measure computer attitudes and anxiety with pre-service primary teacher education students. One instrument, Teacher Concerns Questionnaire (George, 1978) consisted of fifteen items and asked questions like "when I think about using computers in schools, how much am I concerned about this?" (Jones, 1998). The second instrument was the Computer Anxiety Rating Scale (CARS) (Raub, 1981). Results of this study showed that "computer anxiety was not a factor that prevented student teachers using computers in their teaching. …it can be inferred that when supervising teachers do not use learning technologies then neither will student teachers" (Jones, 1998).

Another study, measuring attitudes and habits of teachers towards computers in education, (Martinez, Astiz, Medina, Montero, Pedrosa, 1998) found that teachers have a good attitude towards the incorporation of computers in to schools, however "there is an ample gap between what they claim to prefer and their presentations for classroom work." (Martinez, et al., 1998).

Teacher Training

Since attitude plays an important role in the integration of computer use into the curriculum, it is imperative that we develop a positive attitude for the teacher. The teacher is the liaison between the student and the gain in student performance. The quality of the teaching is the factor most relevant to student learning. The first step in preparing teachers in the use of technology therefore is to get them to want to use it (Tenbusch, 1998).

A successful professional development plan should take into account the needs of the teacher and the role of the integration of technology into the subject matter. Too often a district's professional development plan falls into what has been described as "the Software Trap" (McKenzie, 1999) offering teachers training in basic word processing, the Internet, or presentation software (McKenzie, 1999). Emphasis should be placed on student achievement and advancement rather than a technology rich development plan (McKenzie, 2001). "The challenge should be about using new tools to help students master the key concepts and skills embedded in the science, social studies, art and other curriculum standards. It is not so much about powerpointing, spreadsheeting or word processing. The focus should be on teaching and learning strategies that make a difference in daily practice—on activities translating into stronger student performance (McKenzie, 2001).

The goal therefore is to provide teachers an effective training program, which will enrich classroom activities and give the teacher the confidence to explore this global technology. In an article published in the February 2001 edition of Syllabus journal A Guide to Technology Training is offered: (Yu, 2001).

First, provide a meaningful context for using the technology. "Most teachers don't want to learn how to use technology for the sake of learning it. They want pedagogically sound ways to implement it in the classroom." (Yu, 2001). Second, be sensitive to the technological knowledge base instructors do or do not have (Yu, 2001).

Third, enlist faculty support. Fourth, be aware of the added burden new technology places on instructors. "We are asking a great deal from faculty: to spend valuable time and effort to learn new technologies, to rethink pedagogy in the context of available technology, to develop courseware, to design new ways in interacting with students to enhance learning." (Yu, 2001). Finally, remember that assessment is important as well (Yu, 2001).

Tenbusch (1998), Superintendent and Technology coordinator of the Allen Township Community Consolidated School District and Otter Creek-Hyatt School District in north-central Illinois offer another approach in professional development. He states, "A successful professional development program in technology focuses on skill-building and gives teachers incentives to devote the time and energy needed to use computer technology." (1998). He stresses that training takes a long time and teachers should be rewarded by providing monetary incentives for teachers who take technology training and are willing to train other teachers. Teachers are also allowed to take computers home so they can get additional practice (Tenbusch, 1998).

At the Hungerford School in Staten Island, New York, teachers have one professional development period each day. U.S. Secretary of Education Richard W. Riley honored the school in 1999 as part of The National Awards Program for Model Professional Development. Dr. McInerney of Hungerford states that the success is attributed to having the staff engaged in the development and operation of the program. To be recognized as an award-winning program, student outcomes must be evaluated and show increases (Cromwell, 1999).

As technology becomes more of an everyday occurrence, teachers should incorporate projects that include using the computer to teach students how to organize information using a database, researching a project on the Internet, and using electronic encyclopedias. The teacher becomes more of a facilitator than a dispenser of knowledge (Herr, 2000).

The true challenge of professional development is to inspire and prepare teachers, making learning the goal. Technology should be treated merely as the delivery system. When skills are learned out of context, they have no meaning in the classroom. A development program should include an assessment of student performance. The basis to do anything in a classroom is to promote student learning—technology should be employed only as a tool to be more effective (McKenzie, 2001).

"Whatever the format, effective professional development utilizes key points from adult learning theory. Adults require relevant, concrete experiences with adequate support, appropriate feedback, and long-term follow-up. This type of professional development is very different from traditional one-time teacher workshops." (Rodriguez, 2000).

Summary and Conclusions

School districts have invested much money in the purchase of computers and other technological stuff—in many cases, putting the cart before the horse. Computers in the

classroom should be used only if it will enhance student learning. A review of the literature indicates that many teachers are reluctant to incorporate use of the computer into the curriculum for a number of reasons (McKenzie, 1999). This resistance has led to underutilization of computers in the classroom. Teachers' attitude is a critical determinant of their success in gaining competency in the use and in the teaching of computer use. To counter this problem, programs have been developed that provide training for teachers in computer use and in the integration of computers into the classroom. Programs need to provide training not only in the use of the hardware and software but instructional integration into the classroom as well. Just knowing how to use a computer is not enough. The teacher must have confidence in promoting technology-based integration to enhance student learning.

A review of the many articles on the subject of teachers' attitudes, anxiety, and the incorporation of computer use into the curriculum, the conclusion can be drawn that there is a correlation between attitude and experience. The fact is many teachers simply don't know how to use them and find their presence intimidating. Unless teachers are properly trained, all the hardware will continue to be underutilized. It has also been suggested that the technically competent teacher may have better opportunities for employment (Council on the Quality of Teaching, 1997).

Method

South Plainfield, New Jersey is a moderate sized suburban community (8.18 square miles) comprised of approximately 22,000 residents. The median annual income is approximately $75,000 per household and home values average $200,000.

The South Plainfield public school district consists on one high school, one middle school and five elementary schools. South Plainfield High School is a comprehensive, four-year liberal

arts school meeting the needs of an ethnically and culturally diverse student body. The high school offers programs of studies consisting of approximately 170 full year courses. Course selections include academic and career/vocation oriented courses.

This study focused on full-time faculty at the South Plainfield High School. Over 50% of the faculty has advanced teaching degrees. The ratio of male to female faculty is almost 50% and ranges in years of experience from recent college graduates to members who have taught for more than 30 years. The number of students per faculty member is 10.7 to 1. (New Jersey School Report Card—1999-2000)

The target population included full-time faculty members of the South Plainfield High School who teach subject matter classes. The surveys were distributed to faculty members, by areas of instruction, through their respective team leaders. A total of 86 questionnaires were distributed to teachers in the following departments: English, World Languages, ESL, Social Studies, Mathematics, Science, Business, Applied Technologies, Fine Arts, Physical Education, and Special Education. A memorandum accompanied the survey to explain its purpose. (Appendix D) An average of 85% responded to the survey. Several items per survey were left blank. Years of experience of the teachers who responded to the survey ranged from one year to forty-one years.

The study did not include substitute teachers, guidance counselors, special services personnel, nurses, aides, administrators who teach, or student teachers.

The survey was administered in the form of a questionnaire to the teachers in the group. Although technology use may be encouraged in all areas of the curriculum, some teachers may question the importance of computer skills. They may fall into the category of the late adoptors (McKenzie, 1999) or reluctant teacher and may not be willing to share their lack of computer

knowledge and involvement in their classrooms. There may be a reluctance to participate in a study that they feel does not directly affect their particular area of teaching. This proved to be true as many of the teachers in the department of physical education failed to submit the questionnaire.

The instrument used in this survey is a reproduction of the "Technology Needs Assessment Survey", with permission from the U.S. Department of Education, through the American Institutes for Research (Appendix C). The survey is 100 questions, broken into the following categories: "Your Technology Background", which questions which technologies teachers have used; "Staff Centered Technology", which questions how much technology has been used by teachers for their job; "Student Centered Technology", which questions how much do students use computer-aided instruction (CAI); and, if certain technologies were available, how do faculty members rate the potential of each to impact instruction or to support instruction. The last category is "Staff Development Activities" with questions identifying the quantity of technology training faculty members have received and the quantity of training they feel they need in certain areas.

Results and Findings

The results of the survey provided information indicating the proficiency level of faculty in the use of computers in the areas of word processing, spreadsheet, presentation, and database applications at South Plainfield High School. Responses revealed that teachers are incorporating very little use of technology in the classroom. The only area ranking high was use of the Internet. Teachers did not indicate a great deal of evaluation of software for use within their subject areas. Teachers ranked almost every category of the survey as needing additional training if they are to incorporate more use of technology into their class instruction. In addition, the results indicated that more use would be incorporated if equipment were available.

The results of the survey are broken into categories to parallel the research questions. Following each of the research questions detailed below are the specific questions used in the survey; a table of responses, including percentage of responses; charts depicting the results; and a table illustrating the goal, measures, and conclusions drawn.

The first research question established the proficiency level of faculty in the use of computers in the areas of word processing, spreadsheet, presentation, and database applications at South Plainfield High School.

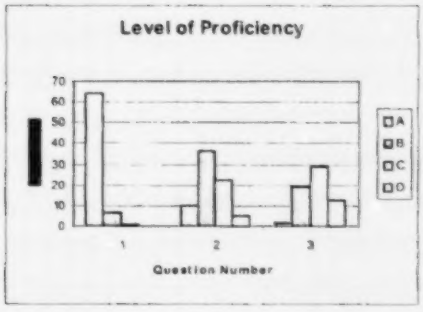
The survey included questions on technology background, staff centered technology, and staff development activities. The following questions were included to ascertain levels of computer proficiency.

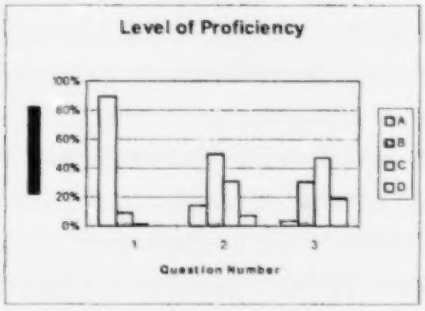
Have you used the following technologies?

A = Yes, frequently
B = Yes, rarely
C = No
D = Don't know

Table 1

		Number Responded				Percentage			
Question Number		A	B	C	D	A	B	C	D
1	IBM Compatible Computer	64	7	1	0	89%	10%	1%	0%
2	Apple MacIntosh Computer	10	36	22	5	14%	49%	30%	7%
3	Other Computer	2	19	29	12	3%	31%	47%	19%





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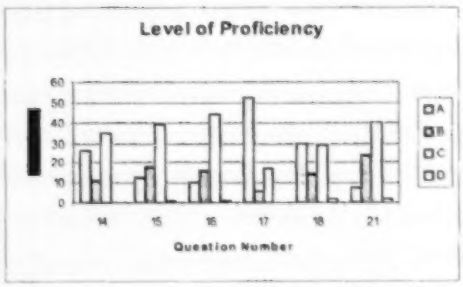
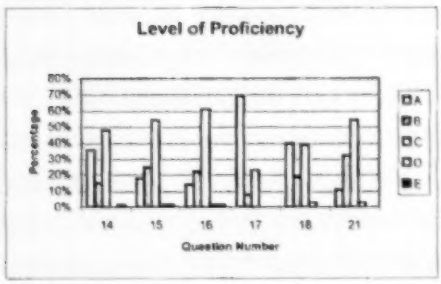
Have you used computer technology for the following for your job?

A = Yes, frequently
B = Yes, rarely
C = No
D = Don't know

Table 2

		Number Responded					Percentage				
Question number		A	B	C	D	E	A	B	C	D	E
14	Student Management Grading/attendance/assessment	26	11	35	0	1	36%	15%	48%	0%	1%
15	Student Information Student records/discipline/health	13	18	39	1	1	18%	25%	54%	1%	1%
16	School Management Budget/personnel/scheduling Calendar	10	16	44	1	1	14%	22%	61%	1%	1%
17	Word Processing Word/WordPerfect etc.	52	6	17	0	0	69%	8%	23%	0%	0%
18	Spreadsheets or Databases Excel, Access, etc	30	14	29	2	0	40%	19%	39%	3%	0%
21	Instructional Demonstration PowerPoint, Persuasion	8	24	40	2	0	11%	32%	54%	3%	0%





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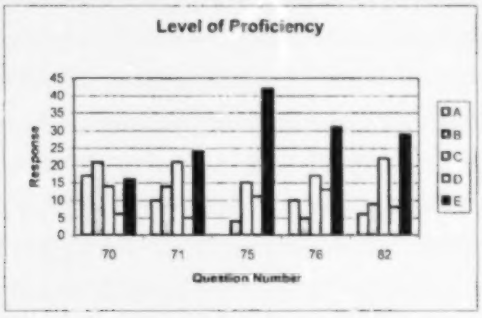
Identify the quantity of training you have received in each of the following areas?

A = Extensive
B = Lots
C = Some
D = Minimal
E = None

Table 3

		Number Responded					Percentage				
Question Number		A	B	C	D	E	A	B	C	D	E
70	Word Processing	17	21	14	6	16	23%	28%	19%	8%	23%
71	Database/Spreadsheet	10	14	21	5	24	14%	19%	28%	7%	34%
75	School Management Budgets/Scheduling/Personnel	0	4	15	11	42	0%	6%	21%	15%	56%
76	Student Management Grading/Attendance/Student Records	10	5	17	13	31	13%	7%	22%	17%	41%
82	Electronic Research Online/CD-ROM based/Databases	6	9	22	8	29	8%	12%	30%	11%	35%



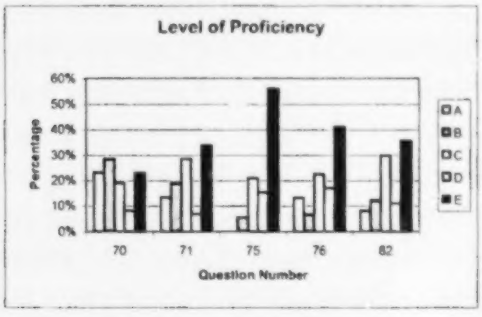


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Table 4 Research Question #1

Goal	Measure(s)	Conclusion
Technology Background	Number and percentage of teachers using IBM compatible computer, Apple MacIntosh computer, or other computer.	A majority of teachers have used IBM compatible computers. Of the seventy-two teachers who responded to this question, sixty-four (89%) indicated they frequently use IBM compatible computers, seven (10%) responded yes, rarely, and one responded no.
	Number and percentage of teachers using computer technology in the areas of student management, student information, school management, word processing, spreadsheet, database, and presentation software	In the areas of student management (grading, attendance, assessment), student information (student records, discipline, health) and school management (budget, personnel, scheduling/calendar), the majority responded "C" (no). Of the 73 who responded to question #17 regarding the use of word processing technology for the job, 52 (69%) indicated they use the technology. A combination of A and B responses to question #18 shows that 44 (69%) also use spreadsheet or databases. Fifty-four percent do not use presentation software for their job.
	Number and percentage of teachers and the quantity of trained they have received.	Although 23% to 28% indicated they have received "extensive" to "lots" of training in word processing, the percentages reflect that most teachers have received no training in the areas of database, spreadsheet, school management, student management, or electronic research.

The second research found how teachers are incorporating the use of technology in the classroom by asking the following question.

In your classes, do students use the following computer-aided instruction (CAI)?

A = Yes, frequently
B = Yes, rarely
C = No
D = Don't know
E = Not applicable

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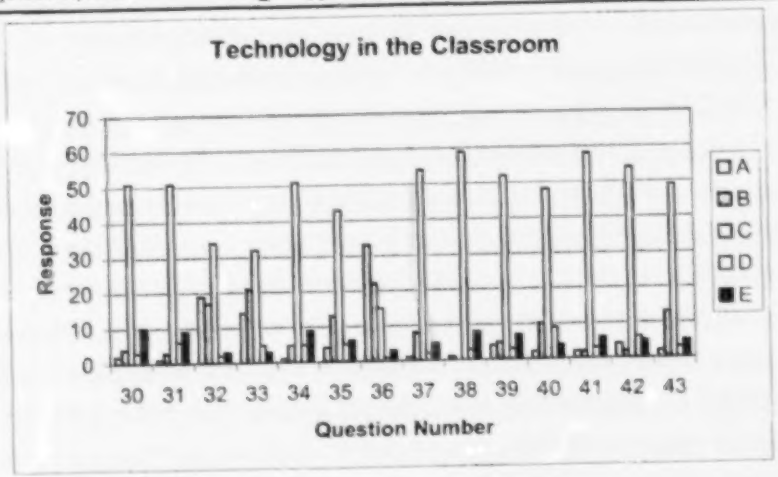
Question Number		Number Responded					Percentage				
		A	B	C	D	E	A	B	C	D	E
30	CAI: drill and practice/tutorial	2	4	51	3	10	3%	6%	73%	4%	33%
31	CAI: simulation/educational games	1	3	51	6	9	1%	4%	73%	9%	29%
32	Word Processing	19	17	34	2	3	25%	23%	45%	3%	9%
33	Information Retrieval SIRS/Periodic Index/Library	14	21	32	5	3	19%	28%	43%	7%	9%
34	Problem Solving Math Blaster	1	5	51	5	9	1%	7%	72%	7%	26%
35	Database/Spreadsheet use Excel, Access	4	13	43	5	6	6%	18%	61%	7%	17%
36	Internet Access Research, Current events	33	22	15	1	3	45%	30%	20%	1%	8%
37	Student Portfolio Building	1	8	54	2	5	1%	11%	77%	3%	14%
38	Authoring/Multimedia Development Hyperstudio, Director	1	0	59	3	8	1%	0%	83%	4%	21%
39	Desktop Publishing Yearbook, Journalism, Newspaper	4	5	52	3	7	6%	7%	73%	4%	18%
40	Electronic Presentations PowerPoint/Persuasion	2	10	48	9	4	3%	14%	66%	12%	10%
41	Video Development	2	2	58	3	6	3%	3%	82%	4%	15%
42	Open Lab Access	4	2	54	6	5	6%	3%	76%	8%	12%
43	Web Page Development	2	13	49	3	5	3%	18%	68%	4%	12%



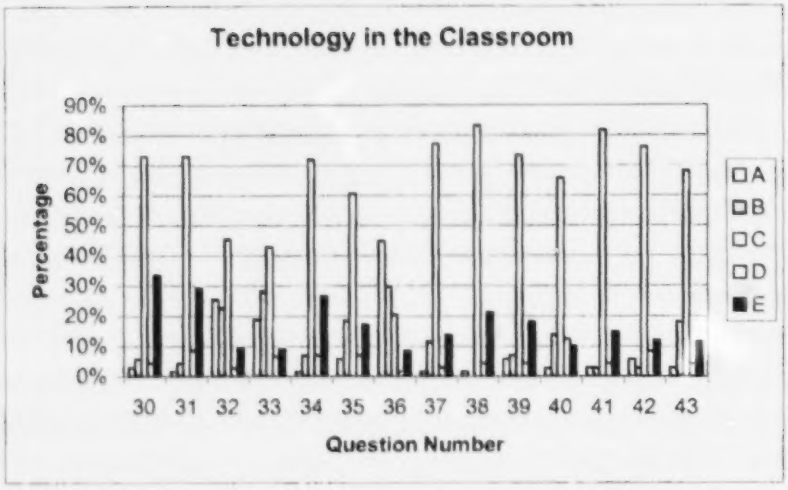


Table 6 Research Question #2

Goal	Measure	Conclusion
Student-Centered Technology	Number and percentage of teachers using computer-aided instruction (CAI)	Of the seventy-four who responded, fifty-five indicated that they use Internet Access, for research and current events. Percentages in all other categories were high response in the category "C" = no. The percentages in these items ranged from 43% to 83%.

The only area where teachers at South Plainfield High School indicated any strong use of computer-aided instruction (CAI) was in the area of Internet Access (research and current events). The other items in the survey asked whether teachers use CAI for drill and practice, educational games, word processing, information retrieval, problem solving, database or spreadsheet use, student portfolio building, desktop publishing, electronic presentations, video development, open lab access and Web Page development. All of the responses to these items indicated little or no use.

The third research question found how teachers are evaluating software for use within their subject areas by asking the following question.

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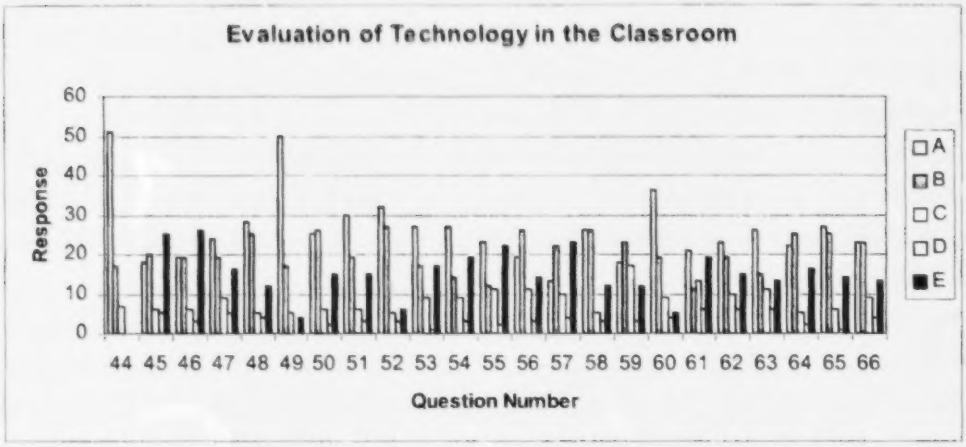
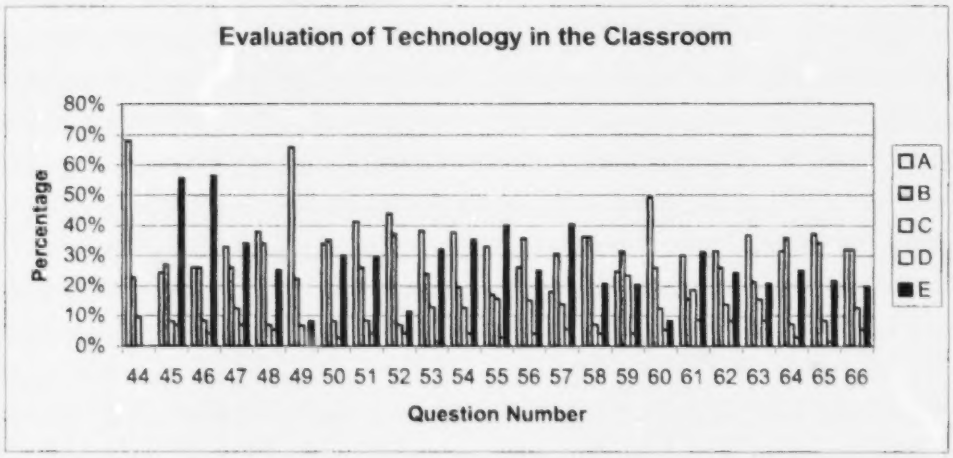
If the following technologies were available, how would you rate the potential of each to impact instruction or to support instruction?

A = High
B = Somewhat high
C = Somewhat low
D = Low
E = Don't know

Table 7

		Number Responded					Percentage				
Question Number		A	B	C	D	E	A	B	C	D	E
44	Individual Computer	51	17	7	0	0	68%	23%	9%	0%	0%
45	Network File Server	18	20	6	5	25	24%	27%	8%	7%	56%
46	Modem/Bulletin Board	19	19	6	3	26	26%	26%	8%	4%	57%
47	Teleconferencing/Interactive Video	24	19	9	5	16	33%	26%	12%	7%	34%
48	Educational TV-ITV Videotapes	28	25	5	4	12	38%	34%	7%	5%	25%
49	Internet Access	50	17	5	0	4	66%	22%	7%	0%	8%
50	Laserdisc/DVD Player	25	26	6	2	15	34%	35%	8%	3%	30%
51	Multimedia System/CD-ROM	30	19	6	3	15	41%	26%	8%	4%	29%
52	Electronic Library Access	32	27	5	3	6	44%	37%	7%	4%	12%
53	LCD Panel/Computer Projector	27	17	9	1	17	38%	24%	13%	1%	32%
54	Electronic Chalkboard	27	14	9	3	19	38%	19%	13%	4%	35%
55	Voice Activation/Touch Screen Input	23	12	11	2	22	33%	17%	16%	3%	40%
56	Video Camcorder	19	26	11	3	14	26%	36%	15%	4%	25%
57	Expert Systems for Diagnostics	13	22	10	4	23	18%	31%	14%	6%	40%
58	School/District E-Mail	26	26	5	3	12	36%	36%	7%	4%	21%
59	Fax Machines	18	23	17	3	12	25%	32%	23%	4%	20%
60	High Quality Printing (color/laser)	36	19	9	4	5	49%	26%	12%	5%	8%
61	Video Capture/Editing Equipment	21	11	13	6	19	30%	16%	19%	9%	31%
62	Web Server/Home Page Development	23	19	10	6	15	32%	26%	14%	8%	24%
63	CD-ROM Production	26	15	11	6	13	37%	21%	15%	8%	21%
64	Desktop Publishing Resources	22	25	5	2	16	31%	36%	7%	3%	25%
65	Scanners	27	25	6	1	14	37%	34%	8%	1%	22%
66	Digital Cameras	23	23	9	4	13	32%	32%	13%	6%	20%





Research Question #3

Table 8

Goal	Measure	Conclusion
Student-Centered Technology	Number and percentage of teachers rating the potential for technologies to support instruction.	The most outstanding percentages here indicated that the teachers feel that the individual computer, item #44, and Internet Access, item #49, have potential to impact or support instruction. Item #60 also received a 49% rating for use of high quality printing (color/laser). Also high in percentage was item #52, electronic library access and item #51, multimedia system/CD-ROM. Fifty-two (72%) responded to the item regarding school district e-mail as "high" and "somewhat high". The items with the highest

	percentages of responses in the "don't know" category are in the use of network file server (#45), modem/bulletin board (#46), voice activation/touch screen input (#55) and expert systems for diagnostics (#57)

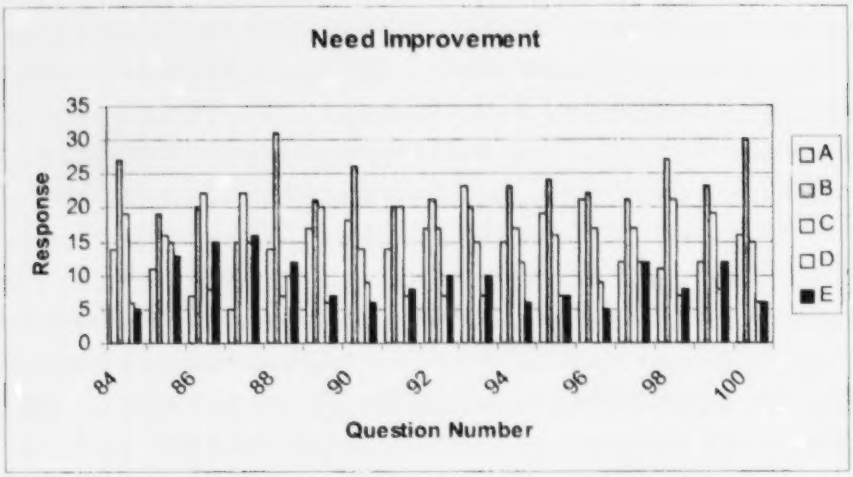
The fourth research question found the areas of staff development which needed improvement at to meet the requirements of integration of computer use in the classroom by asking the following question.

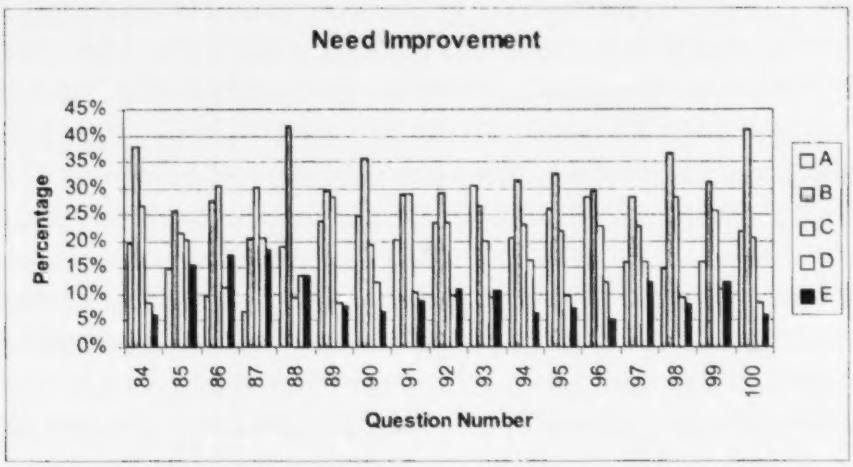
Identify the quantity of training you feel you need in each of the following areas.

A = Extensive
B = Lots
C = Some
D = Minimal
E = None

Table 9

		Number Responded					Percentage				
Question Number		A	B	C	D	E	A	B	C	D	E
84	Advanced Input/Output Devices Scanner/digital camera, thermal printer	14	27	19	6	5	20%	38%	27%	8%	6%
85	Telecommunications Modem/E-mail/internet access, etc.	11	19	16	15	13	15%	26%	22%	20%	15%
86	TV/Audio/Video Educational TV/Laserdisc/VCR, etc.	7	20	22	8	15	10%	28%	31%	11%	17%
87	Word Processing	5	15	22	15	16	7%	21%	30%	21%	18%
88	Database/Spreadsheet	14	31	7	10	12	19%	42%	9%	14%	14%
89	Authoring/Hypermedia Development	17	21	20	6	7	24%	30%	28%	8%	8%
90	Portfolio Development	18	26	14	9	6	25%	36%	19%	12%	7%
91	Networking/Network Management	14	20	20	7	8	20%	29%	29%	10%	9%
92	School Management	17	21	17	7	10	24%	29%	24%	10%	11%
93	Student Management	23	20	15	7	10	31%	27%	20%	9%	11%
94	Desktop Publishing	15	23	17	12	6	21%	32%	23%	16%	6%
95	Interactive Video	19	24	16	7	7	26%	33%	22%	10%	7%
96	Curriculum Specific Applications	21	22	17	9	5	28%	30%	23%	12%	5%
97	Basic Operating System Techniques	12	21	17	12	12	16%	28%	23%	16%	12%
98	CD-ROM Multimedia Applications	11	27	21	7	8	15%	36%	28%	9%	8%
99	Electronic Research	12	23	19	8	12	16%	31%	26%	11%	12%
100	HTML/Web Page Development	16	30	15	6	6	22%	41%	21%	8%	6%





Research Question #4

Table 10

Goal	Measure	Conclusion
Staff Development	Number and percentage of teacher's responses to the quantity of training they feel they need in various technologies.	Overall, responses to these items ranged from "B" lots, to "C" some. The highest percentages indicating some degree of interest fell in the areas of #84 advanced input/output devices, such as scanner, digital camera; #88 database/spreadsheet; #90 portfolio development; #98 CD-ROM/multimedia applications; and #100 HTML/Web Page Development. The only item with response for "extensive" training needed was item #93, in the area of student management, including grading,

attendance, and student records.

From the responses in this category, most of the teachers at South Plainfield High School feel they need more training in many areas of technologies. Very low responses came in at "minimal" or "none". In varying degrees, the majority of the teachers who responded to this survey felt the need for extensive, lots, or some training. Only 5 (7%) indicated they needed extensive training in the area of word processing.

In addition to the responses to the survey, it is noteworthy to include the following comments added to the survey:

"I attended some technology workshops that have tremendous potential, but when we return to the H.S. the equipment is not available. Once we have computers installed in our classrooms I believe greater use and exposure will become a daily routine".

Team Leader

Social Studies

"Would like to learn more on using PowerPoint for presentations in class and also for athletics."

Physical Education

"I would if we had usable programs." (regarding use of technology)
"Would love to have either of these" (regarding LCD panel and electronic chalkboard)
"What are we waiting for?" (regarding school/district e-mail)
"This is a basic necessity" (regarding word processing training)

Team Leader

English

"Thank you for the opportunity to make a difference."

Team Leader

World Languages

Discussion

Summary of Findings

Ask a teacher to fill out another form and s/he will probably look at the form and question "do I have to do this?" Teachers have so much paperwork that the last thing they want to spend their time doing is filling out another form, especially one with 100 questions to answer. The fact, therefore, that the percentage of responses to this survey was so high (85%) indicates a strong interest in the subject matter of the survey. It was not tossed aside as a meaningless administrative inquiry. Instead, the teachers of South Plainfield High School who responded to the survey recognized the importance of computer integration and demonstrated this to be of utmost concern to these educators. Although the survey was long, it was broken into categories that were easy to follow. A checklist was used in the four major areas of technology background, staff centered technology, student centered technology, and staff development activities. The teachers chose to respond to the areas in which they felt their response would make a difference. Some questions were left blank and some teachers chose not to respond to an entire section.

To answer the research questions, the four areas of focus were the current level of computer proficiency of the teachers at South Plainfield High School, how technology is being incorporated into the classroom, are teachers evaluating software for use within their subject areas, and the amount of training needed to improve the use of technology to meet the requirements of integration of technology in the classroom. A breakdown of the responses to each of these categories follows.

Current computer proficiencies. The majority of the faculty at South Plainfield High School is at least familiar with some basic operations of the computer. This implies also that

they will at least make an effort to use a computer for their personal use. What is done in the classroom remains a mystery, since very few responded that they use anything but use of the Internet in their lessons.

Although many of the teachers who responded to the survey indicated they have used an IBM compatible computer, the percentages were somewhat less in the areas listed in the survey as having used the computer for their job. The only area that showed a high response was that of word processing, but the survey did not identify how the teacher used word processing for the job. Very few teachers use technology for the purpose of student management and grading. A low response came in for the use of presentation software. This could be due to the lack of presentation equipment throughout the building. Some teachers have received some training in the use of word processing; most have not received any training in the use of spreadsheet, school management, student management or electronic research.

Technology in the classroom. The responses to this question clearly reveal that very little use of technology is being incorporated into the classroom. The only area that rated high in use is Internet access. All other areas ranked a very high "no" in response to use of technology in the classroom, which included use of the library, presentations, web page development and problem solving.

Evaluation of software for use in the classroom. The areas that ranked the highest in this category were individual computer and Internet access. Responses in the "don't know" category indicate a lack of knowledge or familiarity with the items in the list. It was surprising that district email did not rank higher so that teachers could publish assignments, comments and homework on a web site, or students could email the teacher with particular questions.

Improvement in staff development. This area had overall responses falling evenly from "extensive" to "some" in almost every category with respect to the need of additional training to meet the requirements to integrate computer use in the classroom.

Limitations of study

The response to several sections seemed to be based on familiarity with the technology rather than whether it would truly affect instruction. For instance, fax machines have very little use in the classroom, yet the response to the question of rating the potential to impact or support instruction, many answered "high" to "somewhat high", thus indicating they may have been responding to something they are familiar with rather than that they may use a fax machine as a true educational tool.

Equipment limitations. One of the greatest hindrances to the use of technology is the unavailability of proper equipment. Not one classroom at South Plainfield High School is equipped with projection equipment to effectively use software such as PowerPoint. Without the hardware, no use can be made of software.

Age of faculty and experience. There were no significant differences among teachers with a great deal of experience in teaching and those who were starting out. I found a great deal of enthusiasm from teachers who have been teaching at South Plainfield High School for more than 20 years. There were no correlations that could be drawn between age and experience and desire to integrate and learn.

Analysis of Findings

In a review of the literature, there has been a great deal written regarding the changing role of the teacher, how teachers are adapting to this change and anxiety levels among teachers to incorporate technology into their classroom (Girod, Cavanaugh, 2001). The responses to this

survey did not support those attitudes. In conversations with members of the faculty, it was revealed that there is a great deal of enthusiasm and concern to be able to keep abreast with the change. There is an excitement to want to learn.

Although teachers may have indicated a high degree of personal use, they are not incorporating use of technology in the classroom. As supported by Gilbert, faculty members are comfortable with use of email and the Internet, but are not prepared to incorporate technology into the classroom (Gilbert, 2000). Training programs need to focus on providing teachers with relevant tools they can take back to the classroom. So often a training program will only provide basics and unless the teacher knows how to adapt those basics to make them relevant and meaningful, they will not be used. McKenzie calls it the "Software Trap" where teachers receive training in basic use of the computer but do not focus on student achievement (McKenzie, 1999). Emphasis should be placed on incorporating projects into instruction which may teach students how to organize information using a database, or to make use of electronic encyclopedias (Herr, 2000). The results of the survey indicated there is very little use of this type of instruction at South Plainfield.

It was pointed out that many districts have put the cart before the horse in that school districts have received the equipment but have not properly trained their teachers in their use (McKenzie, 1999). Therefore the equipment sits idle. This point does not coincide with South Plainfield High School. There is not an abundance of hardware, and not one classroom has proper projection equipment to entertain software such as PowerPoint. The horses there are trying to pull the carts, but they find their carts are bare.

Recommendations. What is the true purpose of knowing whether or not teachers use technology in their lessons? Children go to school to learn. It is the teachers' role to assure the

material is getting through. Technology should be used to enhance and supplement the curriculum not to replace it.

A follow-up survey should be conducted to determine precisely what equipment the teachers at South Plainfield High School feel is needed to properly integrate computer use into the classroom.

Further Implications

The purpose of public education is to see that all children have an equal opportunity to learn, in preparation for future educational goals, or to prepare them for the world of work. They should leave our doors with the skills and knowledge that has prepared them for greater understanding and the ability to successfully pursue their lifetime goals.

A teacher's role in this all-important undertaking is to feel confident that what s/he has done in the classroom parallels this mission. New Jersey State Core Curriculum Requirements state that technology must be integrated into the classroom at all levels and it is incumbent upon the teacher to incorporate them (Core Curriculum Requirements, State of New Jersey, 1996).

Evidence shows that although the teachers at South Plainfield High School may not be as proficient as they might like to be, the desire to learn is there. We are at a time now in the beginning of an information revolution and the teachers are willing to take the challenge.

References

Cavrak, S. (1997). [VIE:555] FYI: Teachers are biggest barrier to computer literacy… [On-line]. Available: www.itc.org/vie/archive/current/msg00001.html.

Core Curriculum Content Standards, New Jersey State Department of Education, (1996).

Council on the Quality of Teaching: Computer Proficiency for Teachers, June, 1997, New South Wales, Department of Education and Training, [On-line]. Available: www.det.nsw.edu.au/publications/minister/teacher1.htm.

Cromwell, S. (1999). Administrators: Creating a Successful Staff Development Program. Education World [On-line]. Available: www.educationworld.com/a_admin/admin111.shtml.

Decker, M., Schulman, M., & Sanchez, J. (2000). Online Course Delivery, Cultivating Enlightened Enthusiasm. Syllabus 14, 16-19.

Gilbert, S. (2000). A Widening Gap: The Support Service Crisis. Syllabus 14, 18, 57.

Girod, M., & Cavanaugh, S. (2001). Technology as an Agent of Change in Teacher Practice. T.H.E Journal 28, 40-47.

Herr, P. (2000). The Changing Role of the Teacher, How Management Systems Help Facilitate Teaching. T.H.E. Journal 28, 28-34.

Jones, T. (1998). Concerns of beginning teachers about using learning technologies in the classroom. [On-line]. Available: www.aare.edu.au/90ppap/jon98286.htm.

Jurist, R. (2001). The Promise of Technology for the 21st Century. Observer, 2000-2001 Empowering Educators for the 21st Century, 4-12.

Lian, C. (1997). A Review on Studies of Computer Anxiety in the 1990s, National Institute of Education, Nanyang Technological University. [On-line]. Available: www.aare.edu.au/97pap/chuas535.htm.

Martinez, R., Astiz, M., Medina, P., Montero, Y., & Pedrosa, M. (1998) Attitudes and Habits of Teachers Towards Computers in Education. [On-line]. Available: www.coe.uh.edu/insite/elec_pub/HTML1998/in_mart.htm.

McKenzie, J. (2001). How Teachers Learn Technology Best. The Educational Technology Journal 10. [On-line]. Available: www.fno.org/mar01/howlearn.html.

McKenzie, J. (1999). Why Choice Matters for Professional Development. The Educational Technology Journal 9. [On-line]. Available: www.fno.org/sept99/choice.html.

McKenzie, J. (1999). Reaching the Reluctant Teacher. ESchool News, May, [On-line]. Available: www.fno.org/sum99/reluctant.html.

Morgridge, J. (1998). Electronic Communities: Changing the Way We Work, Play, and Learn. League for Innovation in the Community College Conference on Information Technology.

Murphy, B. (1999). SellingYourself Long—Business Educators' Transferable Skills. Observer 1998-1999. 9-18.

Roberts, J. (2001). First Annual State-of-the-States Survey. T.H.E. Journal 28, 40-52.

Shafer, C. (1998), Teaching's Seven Laws Can Help You Present Better, Too. Presentations, 35.

Tenbusch, J. (1998). Teaching the Teachers, Technology Staff Development that Works, Electronic School, March, [On-line]. Available: www.electronic-school.com/0398fl.html.

Yu, C. (2001). Faculty Development and Technology Training: A Look at Collaborative Support on Campus. Syllabus 14, 50-51.

Biographical Statement

Born and raised in New Jersey, Nina Kelty earned her bachelor's degree from Rider University in 1969, with a major in French and Russian. She taught business education for seven years at Jamesburg High School and is currently a teacher at the South Plainfield High School in New Jersey.

She is the proud mother of two sons and has devoted her life to them. Her husband was an attorney, and while her sons were growing up, she served on the Board of Education in Monroe Township, as well as numerous other community service activities. She was involved for a short time politically, as a legislative aide to a New Jersey State Assemblyman. She then served as the Executive Assistant to the Executive Director of the New Jersey State Lottery.

When her husband passed away, she decided to return to the classroom and has been employed by the South Plainfield Board of Education in New Jersey since 1994. She has been instrumental in implementing programs in computer education that have kept the instructional level in computer applications current.

Nina Kelty is pursuing a program of Administrative Leadership at The College of New Jersey, from which she will graduate in July 2002.

Appendix A

Map of Participating States

Appendix C

TECHNOLOGY NEEDS ASSESSMENT SURVEY

Please provide the following information:

Name_____

Subject(s) you teach_____

Number of years teaching experience_____

Please complete each section of the survey checking the appropriate letter for your response to each item.

YOUR TECHNOLOGY BACKGROUND						
Have you used the following technologies?						
A = yes, frequently B = yes, rarely C = no D = don't know		**A**	**B**	**C**	**D**	**E**
IBM Compatible Computer	Windows 95, Windows NT					
Apple MacIntosh Computer	Performa, PowerMac, LC					
Other Computer	DOS, UNIX, etc.					
VCR	Recorder, player					
Laserdisc Player or DVD Player						
Video Camcorder						
Digital Camera						
LCD Panel or Computer Projector						
Internet Web Browser/Online Service	Navigator, Internet Explorer, AOL, etc.					
Fax Machine						
Modem						
CD-ROM						
Scanner						
STAFF CENTERED TECHNOLOGY						
Have you used computer technology for the following for your job?						
A = yes, frequently B = yes, rarely C = no D = don't know		A	B	C	D	E
Student Management	Grading/attendance/assessment					
Student Information	Student records, discipline, health					
School Management	Budget, personnel, scheduling/calendar					
Word Processing	Word, WordPerfect, ClarisWorks, etc.					
Spreadsheets or Databases	Excel, Access, etc.					
Desktop Publishing	PageMaker, QuarkPress, Print Shop					
Authoring or Multimedia	Hyperstudio, Director					
Instructional Demonstration/Tutorial	PowerPoint, Persuasion					

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Information Retrieval	Infotrac, SIRS, Library Circulation					
Audio/Video Capture or Digitizing	Premiere, Videoshop					
Art/Graphic Development	Photoshop, Painter, Illustrator,					
Computerized Testing	Microtest					
Internet or Online Service Access	Navigator, Internet Explorer, AOL, etc.					
Web Page Development	FrontPage, HomePage					
E-Mail	Outlook Express					
Software packages for your subject						
STUDENT-CENTERED TECHNOLOGY						
In your classes, do students use the following computer-aided instruction (CAI)?						
A= yes, frequently B = yes, rarely C = no D = don't know E= not applicable		A	B	C	D	E
CAI: drill and practice/tutorial						
CAI: simulation/educational games	Sim City, Sim Life					
Word Processing	Word, WordPerfect, ClarisWorks					
Information Retrieval	SIRS, Periodic Index, Library					
Problem Solving	Math Blaster					
Database/Spreadsheet use	Excel, Access					
Internet Access	Research, Current Events					
Student Portfolio Building						
Authoring/Multimedia Development	Hyperstudio, Director					
Desktop Publishing	Yearbook, Journalism, Newspaper					
Electronic Presentations	PowerPoint, Persuasion					
Video Development						
Open Lab Access						
Web Page Development						
If the following technologies were available, how would you rate the potential of each to impact instruction or to support instruction?						
A = High B = Somewhat high C = Somewhat low D = Low E = Don't know		A	B	C	D	E
Individual Computer						
Network File Server						
Modem/Bulletin Board						
Teleconferencing/Interactive Video						
Educational TV-ITV Videotapes						
Internet Access						
Laserdisc/DVD Player						
Multimedia System/CD-ROM						
Electronic Library Access						
LCD Panel/Computer Projector						
Electronic Chalkboard						
Voice Activation/Touch Screen Input						
Video Camcorder						
Expert Systems for Diagnostics						

School/District E-Mail						
Fax Machines						
High Quality Printing (color/laser)						
Video Capture/Editing Equipment						
Web Server/Home Page Development						
CD-ROM Production						
Desktop Publishing Resources						
Scanners						
Digital Cameras						
STAFF DEVELOPMENT ACTIVITIES						
Identify the quantity of training you have received in each of the following areas.						
A = extensive B = lots C = some D = minimal E = none		A	B	C	D	E
Advanced input/output devices	Scanner, digital camera, thermal printer					
Telecommunications	Modem, e-mail, internet access					
TV/Audio/Video	Educational TV, Laserdisc, VCR					
Word Processing						
Database/Spreadsheet						
Authoring/Multimedia Development						
Portfolio Development						
Networking/Network Management						
School Management	Budgets, Scheduling, Personnel					
Student Management	Grading, Attendance, Student Records					
Desktop Publishing						
Interactive Video						
Curriculum Specific Applications						
Basic Operating System Techniques	Mac OS, DOS, etc.					
CD-ROM/Multimedia Applications						
Electronic Research	Online, CD-ROM based, databases					
HTML/Web Page Development						
Identify the quantity of training you feel you need in each of the following areas.						
A = extensive B = lots C = some D = minimal E = none		A	B	C	D	E
Advanced Input/Output Devices	Scanner, digital camera, thermal printer					
Telecommunications	Modem, e-mail, internet access, etc.					
TV/Audio/Video	Educational TV/ Laserdisc. VCR, etc.					
Word Processing						
Database/Spreadsheet						
Authoring/Hypermedia Development						
Portfolio Development						
Networking/Network Management						
School Management	Budgets, scheduling, personnel					
Student Management	Grading, attendance, student records					

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Desktop Publishing						
Interactive Video						
Curriculum Specific Applications						
Basic Operating System Techniques						
CD-ROM/Multimedia Applications						
Electronic Research	Online, CD-ROM based, databases					
HTML/Web Page Development						
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Signature: Nina Kelty	Printed Name/Position/Title: Nina Kelty/Teacher
Organization/Address:	Telephone: 732-280-7999 FAX: 732-280-8484
	E-mail Address: nkelty@aol.com Date: June 18, 2002

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